# **Water Resources**

### Introduction

Vanasse Hangen and Brustlin, Inc. has reviewed information provided by the Town relative to water resources and completed a focus group meeting (May 22, 2003) to further explore the issues associated with the management of water within Amesbury. All of the information provided herein was taken from existing studies or documents provided by the Town or through follow-up discussions with Focus Group members or Town officials. No field observations or verification of the information provided was performed by VHB. The following information summarizes some of the findings and recommendations relative to Amesbury's water resources.

## **Watershed Management Plan (Quantity Control)**

The key water resources in Amesbury are located within the Powow River watershed which is a sub-basin within the greater Merrimack River Watershed. It is the smallest sub-watershed within the Merrimack River Basin. The Powow River watershed is the primary source for the public drinking water supply for the Town. Approximately 47 square miles of the estimated 58.6 square mile (*source: Merrimack River Watershed Council*) Powow River watershed lies outside of Amesbury, mostly in New Hampshire and a small amount in the Town of Merrimac. It was noted that several of the reports reviewed present different total areas for the size of the Watershed.

Amesbury has a Watershed Management Plan, (Version 2.2 May 5, 1999), currently in place that addresses the "operation and management of the lakes, rivers and water control structures located within Amesbury." The Management Plan, which focuses on managing water quantity, is broken into five water districts located within the Powow River Watershed. These are identified in the Plan as follows:

- ➤ District 1 Class A Public Water Supply
- ➤ District 2 Class A Active Recreation
- ➤ District 3 Class B Passive Recreation
- ➤ District 4 Class B Passive Recreation
- ➤ District 5 Class B Active Recreation

The following are excerpts from the Plan and information from additional material reviewed that briefly describe Public Water Supply District 1 management.

Watershed District 1 includes three surface water impoundments: Tuxbury Pond (an impoundment of the Powow River); Lake Attitash; and, Meadowbrook Pond. These key surface water bodies jointly supply water for the Amesbury Water Treatment Plant (AWTP). Descriptions of each are as follows:

**Tuxbury Pond** – 4.25 ft. mean depth, 8 ft. maximum depth, 108 acre area, 459 acre-feet volume. Tuxbury Pond is located on the Massachusetts/New Hampshire border with approximately one-half of the pond in each state. This impoundment of the Powow River, maintained by the Tuxbury Dam, discharges to the Powow River and is the primary source flow towards the drinking water supply intake approximately 1 mile downstream. The New Hampshire Department of Environmental Services (NHDES) has the ability to control flows north of the pond at Trickling Falls Dam in Kingstown, New Hampshire. Flows are typically shut off during the peak season from April 15<sup>th</sup> to November 15<sup>th</sup> limiting the flow to the pond. Tuxbury Pond may also receive inflow from Meadowbrook Pond, to the southwest via the State Line dam control structure.

**Lake Attitash** – 14 ft. mean depth, 30 ft. maximum depth, 360 acre are, 5040 acre-fee volume. Lake Attitash is included in the Amesbury drinking water supply system. Approximately one-quarter of the lake is located in the Town of Merrimac. The lake is also used for boating, swimming and fishing. The Birches Dam lies between Lake Attitash and Meadowbrook Pond and functions as the main control structure.

**Meadowbrook Pond** -2 ft. mean depth, 4.5 ft. maximum depth, 75 acre area, 150 acre-feet volume. Meadowbrook Pond, the shallowest of all the impoundments has three control structures that assist in controlling water levels and flow into and out of the adjoining water bodies. These structures are as follows:

- ➤ The Gate at Archbrook controls the flow of water out of Meadowbrook and Lake Attitash to the Powow River.
- ➤ The Birches Dam controls the flow of water between Lake Attitash and Meadowbrook Pond.
- ➤ The State Line Dam controls the flow of water between Meadowbrook Pond and Tuxbury Pond.

**The Powow River** -- (Approximately 6, 000 linear feet in District 1) - 40 ft. average width, 6 ft. mean depth, 33-acre-feet volume. The portion of the Powow River that is located in Amesbury's designated "Watershed District 1" is impounded by the Newtown Road Weir. Both Tuxbury Pond and Meadowbrook Pond can discharge into this section of the Powow River. The Archbrook outlet connects Meadowbrook Pond to this Powow River section and the Tuxbury pond Dam controls Tuxbury Pond flows to this section.

Seasonal procedures for managing the surface water elevations for the various areas are outlined in the Town's Watershed Management Plan. Tuxbury Pond is the main holding area for the water supply system and the target operating level of the pond year round is currently 96.6 ft. NGVD. It is currently recommended to maintain the other two impoundments at elevations no lower than 95.0 ft in efforts to limit, or eliminate, past complaints of private well failures, impacts to wildlife/fisheries or recreational and/or aesthetic problems that may result from lower elevations during normal operations. The existing management policy does however allow for Meadowbrook Pond and Lake Attitash elevations to be lowered to 94.0' before November 1, (if refilled to 96.0 ft by March 1 and 96.5 ft by May 1) to allow for high flow storage as well as weed control by winter exposure. The draw down procedures for aquatic weed control was outlined in the Water Level Draw Down Assessment Program for Tuxbury Pond (1994). The Pare Engineering Safe Yield Analysis mentioned that some Attitash lakeside residents feel the winter draw down time is not long enough to allow for storage of the spring meltdown. Pare Engineering mentions in their report that a longer draw down time may be warranted.

It was proposed within the Watershed Management Plan to have the current policy formally adopted as a written procedure that can be incorporated into a Town wide Waterway Management Plan.

The Town currently has a firm under contract to prepare a Watershed Management Model using the Hydrologic Engineering Center (HEC) HEC-RAS and HEC-HMS computer models for hydrologic and hydraulic evaluations. The resulting model will be beneficial in evaluating the interactions between the various components of the water supply system as well as the watershed as a whole. This will enable the Town to further refine the Watershed Management Approach for the varied uses that are supported including water supply, recreation and fisheries and wildlife habitat. It is expected that this Model will be complete in the spring of 2004.

### Water Control Structures/Dams

The Town owns and operates approximately eight water control structures/dams. A few water control structures that exist in Amesbury are solely for aesthetics and some do not pond water to a depth that qualifies them as dams under the Massachusetts Dam Safety regulations.

Water levels at the larger water bodies in the town are generally managed for the purpose of maintaining elevations that allow for recreation activities and/or for adequate drinking water supply. Procedures for maintaining water surface elevations are described in the Town's Water Management Plan described above.

A study of the Arch Brook Culvert, State Line Dam, The Birches and the Powow River Weir, (which are all components within Amesbury's drinking water supply system), was prepared by Pare Engineering. The study was completed in order to

provide the Town with estimated costs to repair or replace structures that are necessary for proper water resource management. They identify the normal operating elevation of the main three water supply bodies as 96.6 ft. NGVD. Many of the Dams need to be upgraded, especially the weir control structures, as it is difficult to operate many of the weirs (that are controlled by stop logs) safely. The Town has no major industrial users with water withdrawals.

The following are some general notes relative to the Dams within Amesbury's boundaries:

Lake Gardner Dam – Located off Whitehall Road. This is a 750-foot long dam with a maximum height of 25 feet. It impounds water along the Powow River. The discharge flows via the Powow River through the Town center towards the Merrimack River. Hand operated flow control gates are part of the structure. The Dam was rehabilitated in 2000 and has an Operation and Maintenance Manual prepared by Pare Engineering (November 2001) in accordance with the Massachusetts General laws for Dam Safety.

**Tuxbury Dam** –An entire replacement of the Dam was completed a few months ago, it is now easily operated with mechanical gates.

Clarks Pond Dam – This control structure, located in a residential area, can pond water up to a 7-foot depth but has no variable control structure associated with it. While the Town would like to upgrade the dam so it can be managed, it is not considered a priority at this time because there is not a large volume of water controlled behind the Dam and it is not critical for water supply or recreation.

**Crib Dam** – This dam, located across from Town Hall, had some work completed in 1986. At present there is no safe way to operate the gate structure and it has some structural deficiencies. While this dam is solely for aesthetic reasons it is in the center of Town and it is recommended to fix the structural deficiencies and put a gate control structure on it that is safe.

Newton Road Weir – Also referred to as the Powow River Weir, this 193-foot long weir is located at the end of Newton Road and impounds water for water intake at the pump station. The weir spans the river and is located approximately 1,000 feet downstream of the intake of the Water Treatment Plant (WTP). It is critical to be able to impound water at this location at the proper height. According to the Town's 1999 Watershed Management Plan and the Safe Yield Analysis, the weir elevation is 36-inches over the intake elevation for the WTP. Information provided indicates that the structure is in poor condition and needs rehabilitation. The structure was originally built in 1950 and was about to fail in 1976. Some improvements were made at that time along with an increase in the height of the Dam by 14 inches. The neighborhood initiated a lawsuit that has since been settled but was based on increased flooding due to the increased dam height. It should be noted that a treatment plant has since been built that is dependent on the current (14-inch higher) water level for correct

operation. The timber and sheet pile dam is currently operated with stop logs and there was a breach in the weir. As stated in the Safe Yield analysis it is estimated that losses of water at the Dam was up to 3 MGD. While the leak has been repaired, the dam is currently experiencing stability problems. Pare Engineering has identified considerable erosion around the perimeter of the weir; this erosion is typically repaired with temporary measures annually. If permanent stabilization is not completed, it is likely that the river will bypass the weir completely and create an oxbow in the river cutting through adjacent property.

Stateline Dam – According to Pare Engineering (2000) this dam is a concrete control structure that regulates discharge from Meadowbrook Pond into Tuxbury Pond. Pare identifies the structure as 7-feet high and 15-feet long with a 4.5-foot wide spillway controlled by timber stop logs, which acts as the dam which then flows to a 36-inch culvert under Kimball Road between Tuxbury Pond and Meadow Brook Pond. The dam can act as either upstream control going from Meadowbrook to Tuxbury Pond or downstream control if flow is going from Tuxbury Pond to Meadowbrook. The Dam was rehabilitated in 1980. According to the Town Engineer, the dam is in fair condition and while the stop log bay is in a safe location for operating, it is difficult to maneuver the stop logs. Pare Engineering noted some erosion and separation around the training walls during their inspection.

Arch Brook Culvert – Arch Brook Culvert controls the flow from Meadowbrook Pond to the Powow River. Pare Engineering describes this as a 2-foot by 4-foot stone box culvert under Kimball Road with timber stop logs that control the flow at the upstream end. Inspection by Pare Engineering in 2000 indicated that some stones are missing in the culvert sidewalls and some roots were visible in the structure. Subsidence of the exterior embankment was noted but the exact source was not defined. Repairs were made as part of the Tuxbury pond dam construction.

**Birches Dam** – This is the outlet for Lake Attitash and controls flows between Meadowbrook and Lake Attitash. It is a concrete box culvert with timber logs on the upstream side.

**Bailey Pond Dam** – This dam is an old mill structure sluice where and old factory water wheel was located near the Merrimack River. The developer of that old factory has rehabilitated this dam and it is not a Town water resources operational concern.

# **Drinking Water Supply**

The Town has a Water Resource Protection District, Section XIV of the Zoning Bylaws, with comprehensive protection regulations included therein. The protection zones include watershed areas of the Powow River and tributaries, Zone I, and interim wellhead protection areas to the existing municipal water supply wells. These are delineated on the Town's Water Resources Protection District Map, incorporated as part of the Zoning Bylaws. The Town's bylaws indicate they are

awaiting approval of the interim wellhead protection areas by the Department of Environmental Protection, and at that time these areas will be state approved Zone II areas. The Town may wish to have a complete and thorough review of their current bylaw by a consultant or state groundwater protection representative to evaluate if the bylaws have inadequacies that should be addressed.

As previously described, the Powow River and three surface water bodies, Lake Attitash, Meadowbrook and Tuxbury Ponds, comprise the primary drinking water supply system for Amesbury. The town also maintains and operates two gravel packed wells for times of high demand and/or emergency usage.

The Rings Corner Water Treatment Plan (WTP) was constructed in 1986 at Newtown Road approximately 1-mile downstream of the Tuxbury Pond Dam for the surface water system. The intake for the treatment plant is a 24-inch direct surface withdrawal located in the Powow River. At the present time, the chief surface water body withdrawal location is Tuxbury Pond, which experiences significant withdrawals during the summer months. Impacts to recreation, wildlife and aesthetics were mentioned in numerous reports relative to the summer draw down.

Pare Engineering completed a Safe Yield Analysis Study using the Hydrologic Engineering Center's HEC-5 Model (January of 2001). The study evaluated the effects of drawdown for all of the three surface water supplies as one single reservoir system, comprised of hydraulically connected storage areas. The study evaluated worst case (1965 draught) conditions as well as year 2000 usage and projected year 2020 usage. In terms of water supply, conclusions from the study indicate that the Amesbury water supply is adequate for the year 2020 under draught conditions with average daily inflows and monthly average consumption rates with efficient flow control to the WTP.

During discussions with the Town it was mentioned that the idea of selling water to surrounding communities during the wet season to allow their wells to recharge is being explored. Amesbury currently sells water to the Town of Salisbury. They have sold up to 250 gpd at retail rate and have also been approached by the Town of Merrimack regarding the extension of water supply water to their town for specific projects. No formal plan for pursuing such opportunities were identified

It was noted that the Water Supply Treatment Plant is greater than 20 years old, is at or near the end of its design life, and is in need of some repairs. The Town requested \$5-million in capital projects to reach water purification regulations, but it is expected that the necessary funding to achieve requirements can not be provided by the Town. In addition to water treatment requirements, it was stated that the entire facility itself is in need of upgrades.

## **Water Quality**

Documents reviewed by VHB identify Lake Attitash as mesotrophic and Meadowbrook and Tuxbury Ponds as eutrophic. The Powow River and Back River are listed as 303d Category 5 Waters. Under the Clean Water Act Section 303(d) and 305(b), a Category 5 Water classification is applied when the water quality standard is not attained. The water body is then defined as "impaired or threatened for one or more designated uses by a pollutant(s), and requires a Total Maximum Daily Load (TMDL) study". Non-attainment in these water bodies has been attributed to suspended solids, aquatic weed growth (typically due to excessive nutrient loads) and pathogens. In terms of pathogens, the sources typically include failing septic systems, wastewater treatment plant overflows and stormwater runoff.

The Town owns and operates the Amesbury Wastewater Treatment Plant, which has an individual NPDES discharge permit. In the past, the facility experienced overflows of insufficiently treated wastewater during rainfall events. As described in the Public Utilities and Infrastructure Element section of the Master Plan the Town was required by the EPA to upgrade the facility. The upgrades which will eliminate overflows are in process and expected to be completed by the 2003 deadline.

The Powow River Watershed has completed water quality monitoring at eight stations within the drinking water supply watershed. Five are along the Powow River and three within tributaries including the Back River and Meadowbrook Pond. The observations provided in their Newsletter indicate that the Tuxbury Pond water quality is generally good, however algal blooms have been identified in Meadowbrook Pond and stormwater runoff is suspected as a major contributor of pollutants to the system, especially in the Lake Gardner area. Further sampling, including stormwater runoff sampling was recommended in the watershed newsletter.

As stated in the Powow River Watershed Association's Watershed News, "PRWA Water Quality Monitoring Enters Third Year", while the watershed for Tuxbury Pond is probably the least developed watershed within the drinking water supply system of impoundments, it is not protected from future development. Some impacts are a result of failing septic systems and the issue of providing sewer in this area has been identified as a "double edged sword". For instance, while sewer service at Newton Road will assist in decreasing water quality impacts from failing systems, it can encourage further development on the other side of Meadowbrook above Lake Attitash.

The Camp Dresser & McKee "Lake Attitash Watershed Management Plan" also identifies stormwater runoff, both urban and agricultural, as a suspected contributor of pollutants contributing to non-attainment. According to the Town's 319 Grant proposal, the MA Department of Environmental Protection (in the Merrimack River Basin 1999 Water Quality Assessment Report) recommended that stormwater management control measures be installed on the Back River to prevent sedimentation and erosion. At present, the Town has submitted a proposal to obtain

319 Grant money for implementation of various Best Management Practices (BMPs) including storm drain markings, pet waste bag dispensers, public education workshops, new Bylaws as well as structural BMPs. The goal for the BMPs listed are focused at the pollutants of concern identified in the past studies with the control of stormwater runoff a priority.

Public surveys and various reports identify the lack of control on upstream activities as it relates to drinking water quality as a major concern for the Town. While no definitive agreements regarding upstream water quality control efforts were found during the review, the Powow River Watershed Association in coordination with the Merrimack River Watershed Council have made efforts to work together to share concerns and to develop/implement strategies to protect the water supply from upstream impacts.

Amesbury joined with the Lake Attitash association to successfully acquire a Lakes and Waterways Demonstration Grant from the Massachusetts Executive Office of Environmental Affairs. The money from this grant is being used to implement water quality controls that include:

- ➤ A Filter Barrier at Back River where it discharges to Lake Attitash to control manure related pollutants in agricultural run off.
- Deep sumps in catch basins adjacent to the Lake.
- ➤ A baffle tank at certain critical outlets to the Lake.
- ➤ The construction of vegetated wetlands (in Merrimac) to treat stormwater runoff from residential areas prior to discharge to the Lake.
- ➤ A sediment plume remediation project at Camp Bower.

# Site-specific Sedimentation and Erosion Control Concerns

Some specific water quality concerns such as sedimentation and erosion control issues were discussed with the Public Facilities and Infrastructure Focus Group and Town officials. Some examples are provided as follows:

Margaret Rice Park – It was noted during discussions with the Town that along South Martin Road and Old Country Road there is no closed drainage system and a few leaching catch basins. This area was formerly a gravel pit and is not stabilized. Sediment from unstabilized areas runs down stream and silts up the stream. This not only causes environmental damage but also creates flooding for local farmers.

**South Martin Road** – Problems with erosion control associated with new home construction was identified along South Martin Road. Apparently there are steep

slopes that are experiencing erosion and failure and considerable sediment is flowing towards the Merrimack River.

The issues associated with sedimentation and erosion control will/are being addressed under the Municipal Stormwater Management Plan as required by the EPA and described in the following section.

## **Municipal Water Quality/Stormwater Management**

Amesbury has detailed and progressive Zoning By-Laws for Wetlands and Flood Plain Protection (Section XII) and Water Resource Protection (Section XIV). These comprehensive Bylaws clearly limit the activities and set forth performance standards for these protected areas. In addition, the Town currently regulates the management of stormwater for subdivisions under the Town of Amesbury Subdivision Rules and Regulations, Revised August 6, 2002. These Rules and Regulations address water quality and quantity management design standards and performance standards for sedimentation and erosion control during construction.

While the current regulations are above average in terms of typical town regulations, the requirements imposed by the EPA for specific stormwater runoff control measures and for specific enforcement mechanisms will require the Town to amend the existing Bylaws. The additions necessary will further assist the town in implementing the already strong watershed protection goals.

The Town is required to submit their NPDES 5-Year Stormwater Management Plan to the EPA and DEP by July 30, 2003. While no Draft of this plan was reviewed by VHB for this summary, many of the components required in the EPA's regulations were included as tasks in the Town's 319 Grant Proposal submitted on June 2, 2003. It is evident from the proposal that the Town has planned to implement stormwater controls including public education and Bylaws with mechanisms for enforcement as related to Detection and Elimination of Illicit Discharges, Management of Stormwater Related to Construction Activities and Post-Construction Stormwater Management. While only outfall mapping is required, storm drain mapping is considered extremely beneficial if proper funding is available. It should be noted that the Town will also be responsible for tracking the implementation and progress of the stormwater management programs and annual updates to the EPA will be required. The Municipal Stormwater Management program could be most effectively implemented and continued with the effective use of a data management tool that is incorporated into a coordinated town-wide infrastructure and planning data base.

Due to the increased costs for stormwater management resulting from EPA regulations and the increased competitiveness for grants (i.e. 319 Grant Program) the Town may wish to consider an enterprise fund for stormwater management. The Town currently has enterprise accounts for water and sewer and can therefore operate independently from the Town's general budget.

### Flooding - Water Quantity Control Issues

Town Park Pond – The low level outlet at Town Park Pond is not working and the overflow spillway doesn't have capacity during large storms. This results in overtopping of Green Leaf Street. This street handles cut through traffic and overtopping of the roadway is a safety concern. In addition, the overtopping causes some flow to wind up in the area adjacent to the Roman Catholic Church downstream. The church has expressed some concerns regarding this situation. It has also been identified that the bridge/dam at the Town Park Pond needs some repairs and general maintenance. At present it is mostly aesthetic, but it is believed by the Town Engineer that in time it will become a safety and maintenance issue.

High School – Cashmans – Carriage Hill – These areas contribute flow towards Town Park Pond and also experience some flooding. Flows from Carriage Hill and Cammets Court flow downstream to wetlands located in between Greenland and Sparkhawk streets. The wetlands experience substantial flooding. A preliminary study was done for the Carriage Hill drainage area. While Higgins Environmental did study options for stream restoration in this area (Town Park) with grant money for stream restoration, no further action has been taken. The Town Engineer indicates that if funds were available for addressing flooding issues, this would be highest on the priority list.

**Powow Hill/Amesbury Elementary School** – flows from this area go to a 24-inch culvert beneath Southampton Road. It is reported that the area is always wet and under water. It was suggested that the culvert could easily be upgraded to alleviate the situation, but downstream impacts would then be experienced at the culvert at Market and Clinton Street. In order to avoid this, additional detention would be required. It was mentioned that additional detention at the school might be possible.

While there are some localized flooding issues as a result of grading, and some houses located within the Federal delineated floodplain, other than those locations mentioned above, no major flood problems were identified.

### **Public Works**

The recommendations set forth in the Amesbury Study of the Organization of Public Works Agencies (MMA Consulting Group 2003) if implemented would be highly beneficial in terms of water resources management for the Town. As mentioned in the report, many of the Public Works type functions are reactionary and do not allow for the evaluation of existing infrastructure conditions and needs that are required for cost effective management and planning. As described in previous sections, multiple functions related to water resource management fall under the responsibility of the Town Engineer with some functions related to infrastructure and water supply under the responsibility of other departments including Utilities

and DPW. MMA Consulting recommends consolidating the Office of Town Engineer, Highway, water and sewer operations into a single Department of Public Works. Given the complexity of the water supply and stormwater management systems that include infrastructure maintenance and operational needs, the need to have multiple departments working in unison is paramount.

MMA Consulting also recommends the implementation of a "series of management and planning programs designed to inventory and evaluate the infrastructure of the Town." VHB feels that this is a critical step towards evaluating the existing infrastructure conditions which facilitates effective planning for upgrades as well as regular maintenance and operational requirements.

The Town has completed various studies relative to water resources/management. Many of these studies and reports provide valuable recommendations for improvement of the Town's resources and/or management of the resources. In the next phase of work, VHB will attempt to list key recommendations related to the individual sections described earlier in this report. It became evident during the review of materials that there was no unified process for the dissemination or storage of the information that would allow the various reports, studies and recommendations to be evaluated concurrently by various departments and/or groups. This lack of information management results in the reactionary services and inability to evaluate and plan infrastructure improvements and management requirements efficiently as described by MMA.

VHB agrees with MMA that the development of an assessment, evaluation and data management process for the Town's infrastructure should be clearly defined. It is also agreed that such a process should include an interactive computerized database that could be continually updated to provide a unified management tool for the Town. This unified database will not only assist in asset management, infrastructure management, planning and record keeping, it well be an effective tool for coordinating the various functions of different departments, regardless if a single DPW is developed. The Town has already purchased a Data Asset Management System but according to the Town Engineer it is not in full use at this time. It is strongly recommended that this tool is made operational and expanded to provide maximum utility for the Town. For example, in addition to an inventory of Amesbury's infrastructure, the existing Asset Management Tool with a Geographic Information System interface as recommended by MMA could be upgraded to provide the following:

- ➤ Infrastructure conditions database with instantaneous printout availability that could be used to prioritize improvements and secure funding.
- Maintenance Schedules with forms to input results of maintenance that can then be directly printed and submitted to the EPA for annual NPDES Stormwater Management reporting.
- ➤ Database for managing complaints, calls for service, project tracking etc.

- ➤ Mapped outfall locations with water quality data inputs to assist in the ongoing stormwater BMP implementation programs and EPA Stormwater Requirements.
- ➤ A unified Town Facilities/Utilities/Infrastructure data base this may include the following:
  - Integration with the spreadsheet Watershed Model currently being prepared to assist in water supply management.
  - > Water control structures management database that could include rainfall, water withdrawal, dam operation, maintenance requirements, upgrades.

While the additional information that one could add to the database is limitless, it recommended that, at a minimum, the Town enters the information it currently tracks into a unified system that can be used for efficient management and planning procedures.

In summary, the ultimate goal is a unified infrastructure management system that allows for evaluation, planning and cost estimation that allows for effective financial planning for operation, maintenance and capital improvements.

MMA further recommends in their report that the Town should evaluate upgrading the quality and capacity of the Towns two groundwater wells to provide an adequate emergency water supply. While not much detailed discussion was provided, this is a significant issue that should be given attention before an emergency situation arises.

In terms of Water Resource Management, VHB is in full agreement with the recommendations of MMA Consulting Group and feels strongly that their reorganization and recommendations would greatly benefit the town and should be fully implemented.